

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) An image playback apparatus that plays back moving picture data composed of a series of groups of picture data, each group comprising a plurality of encoded pictures, the image playback apparatus comprising:

a buffer unit for buffering the moving picture data;

a decoder for reading out and decoding the moving picture data buffered by the buffer unit;

an output unit for outputting pictures decoded by the decoder to a subsequent stage; and

a control unit configured for:

controlling the buffer unit ~~to buffer~~, concerning a group of picture data that is played back last during a playback operation, ~~at least picture data located at the end~~ to buffer all of the pictures in the group in a playback order, and ~~to buffer~~, concerning groups of picture data except for the group of picture data that is played back last during the playback operation, ~~picture data encoded by~~ to buffer fewer than all of the pictures in the groups, according to a predetermined encoding method,

controlling the decoder ~~to decode~~, concerning the group of picture data that is played back last during the playback operation, ~~at least the picture data located at the end~~ to decode all of the pictures in the group in the playback order, and ~~to decode~~, concerning the groups of picture data except for the group of picture data that is played back last during the playback operation, ~~the picture data encoded by~~ to

decode fewer than all of the pictures in the groups, according to the predetermined
encoding method, and

controlling the output unit ~~to output~~, concerning the group of picture data
that is played back last during the playback operation, ~~at least the picture data located~~
~~at the end~~ to output all of the pictures in the group in the playback order, and ~~to output~~,
concerning the groups of picture data except for the group of picture data that is played
back last during the playback operation, ~~pictures corresponding to the picture data~~
~~encoded by~~ to output fewer than all of the pictures in the groups, according to the
predetermined encoding method.

2. (Currently amended) An image playback method for controlling an image
playback apparatus having a decoder, an output unit, and a buffer unit for buffering
moving picture data composed of a series of groups of picture data, each group
comprising a plurality of encoded pictures, the image playback method comprising the
steps of:

controlling the buffer unit ~~to buffer~~, concerning a group of picture data that is
played back last during a playback operation, ~~at least picture data located at the end~~ to
buffer all of the pictures in the group in a playback order, and ~~to buffer~~, concerning
groups of picture data except for the group of picture data that is played back last during
the playback operation, ~~picture data encoded by~~ to buffer fewer than all of the pictures
in the groups, according to a predetermined encoding method;

controlling the decoder ~~to decode~~, concerning the group of picture data that is
played back last during the playback operation, ~~at least the picture data located at the~~

~~end to decode all of the pictures in the group~~ in the playback order, and ~~to decode~~, concerning the groups of picture data except for the group of picture data that is played back last during the playback operation, ~~the picture data encoded by~~ to decode fewer than all of the pictures in the groups, according to the predetermined encoding method; and

controlling the output unit ~~to output~~, concerning the group of picture data that is played back last during the playback operation, ~~at least the picture data located at the end~~ to output all of the pictures in the group in the playback order, and ~~to output~~, concerning the groups of picture data except for the group of picture data that is played back last during the playback operation, ~~pictures corresponding to the picture data encoded by~~ to output fewer than all of the pictures in the groups, according to the predetermined encoding method.

3. (Currently amended) A non-transitory computer-readable storage medium storing a program for controlling an image playback apparatus having a decoder, an output unit, and a buffer unit for buffering moving picture data composed of a series of groups of picture data, each group comprising a plurality of encoded pictures, the program including instructions for a computer to execute a process comprising the steps of:

controlling the buffer unit ~~to buffer~~, concerning a group of picture data that is played back last during a playback operation, ~~at least picture data located at the end~~ to buffer all of the pictures in the group in a playback order, and ~~to buffer~~, concerning groups of picture data except for the group of picture data that is played back last during

the playback operation, ~~picture data encoded by~~ to buffer fewer than all of the pictures in the groups, according to a predetermined encoding method;

controlling the decoder ~~to decode~~, concerning the group of picture data that is played back last during the playback operation, ~~at least the picture data located at the end~~ to decode all of the pictures in the group in the playback order, and ~~to decode~~, concerning the groups of picture data except for the group of picture data that is played back last during the playback operation, ~~the picture data encoded by~~ to decode fewer than all of the pictures in the groups, according to the predetermined encoding method; and

controlling the output unit ~~to output~~, concerning the group of picture data that is played back last during the playback operation, ~~at least the picture data located at the end~~ to output all of the pictures in the group in the playback order, and ~~to output~~, concerning the groups of picture data except for the group of picture data that is played back last during the playback operation, ~~pictures corresponding to the picture data encoded by~~ to output fewer than all of the pictures in the groups, according to the predetermined encoding method.

4. (Currently amended) An image playback apparatus that plays back moving picture data composed of a series of groups of picture data, each group comprising a plurality of pictures, each of which is classified into one of an I(Intra-coded)-picture, a P(Predictive-coded)-picture, and a B(Bidirectionally Predictive-coded)-picture, the image playback apparatus comprising:

a buffer unit for buffering the moving picture data;

a decoder for reading out and decoding the moving picture data buffered by the buffer unit;

an output unit for outputting pictures decoded by the decoder to a subsequent stage; and

a control unit that, when the image apparatus is instructed to operate in forward playback different from normal playback, is configured for:

controlling the buffer unit ~~to buffer~~, concerning a last group of picture data in a normal playback order, to buffer all of the picture data, and ~~to buffer~~, concerning groups of picture data except for the last group of picture data, to buffer part of the picture data including at least picture data classified into the I-pictures;

controlling the decoder ~~to decode~~, concerning the last group of picture data, to decode the picture data classified into the I-pictures or the P-pictures, and ~~to decode~~, concerning the groups of picture data except for the last group of picture data, to decode at least the picture data classified into the I-pictures; and

controlling the output unit ~~to output~~, concerning the last group of picture data, to output at least a last picture of moving pictures, and ~~to output~~, concerning the groups of picture data except for the last group of picture data, to output at least pictures corresponding to the I-pictures.

5. (Previously presented) The image playback apparatus according to Claim 4, wherein

the control unit is configured to specify picture types to be decoded for each group of picture data, and notifies the decoder of the picture types to be decoded in advance, and wherein

the decoder is configured to read out and decode the moving picture data buffered by the buffer unit according to the notification from the control unit.

6. (Currently amended) An image playback method for controlling an image playback apparatus having a decoder, an output unit, and a buffer unit for buffering moving picture data composed of a series of groups of picture data, each group comprising a plurality of pictures, each of which is classified into one of an I-picture, a P-picture, and a B-picture, the image playback method comprising the steps of:

when the image apparatus is instructed to operate in forward playback different from normal playback:

controlling the buffer unit ~~to buffer~~, concerning a last group of picture data in a normal playback order, to buffer all of the picture data, and ~~to buffer~~, concerning groups of picture data except for the last group of picture data, to buffer part of the picture data including at least picture data classified into the I-pictures;

controlling the decoder ~~to decode~~, concerning the last group of picture data, to decode the picture data classified into the I-pictures or the P-pictures, and ~~to decode~~, concerning the groups of picture data except for the last group of picture data, to decode at least the picture data classified into the I-pictures; and

controlling the output unit ~~to output~~, concerning the last group of picture data, to output at least a last picture of the moving pictures, and ~~to output~~, concerning

the groups of picture data except for the last group of picture data, to output at least pictures corresponding to the I-pictures.

7. (Currently amended) A non-transitory computer-readable storage medium storing a program for controlling an image playback apparatus having a decoder, an output unit, and a buffer unit for buffering moving picture data composed of a series of groups of picture data, each group comprising a plurality of pictures, each of which is classified into one of an I-picture, a P-picture, and a B-picture, the program including instructions for a computer to execute a process comprising the steps of:

when the image apparatus is instructed to operate in forward playback different from normal playback:

controlling the buffer unit ~~to buffer~~, concerning a last group of picture data in a normal playback order, to buffer all of the picture data, and ~~to buffer~~, concerning groups of picture data except for the last group of picture data, to buffer part of the picture data including at least picture data classified into the I-pictures;

controlling the decoder ~~to decode~~, concerning the last group of picture data, to decode the picture data classified into the I-pictures or the P-pictures, and ~~to decode~~, concerning the groups of picture data except for the last group of picture data, to decode at least the picture data classified into the I-pictures; and

controlling the output unit ~~to output~~, concerning the last group of the picture data, to output at least a last picture of the moving pictures, and ~~to output~~, concerning the groups of picture data except for the last group of picture data, to output at least pictures corresponding to the I-pictures.

8. (Previously presented) The image playback apparatus of claim 4, wherein, when the image apparatus is instructed to operate in a reverse playback different from the normal playback, the control unit is further configured to:

control the buffer unit to buffer, concerning a first group of picture data in the normal playback order, all of the picture data, and to buffer, concerning groups of picture data except for the first group of picture data, part of the picture data including at least the picture data classified into the I-pictures;

control the decoder to decode, concerning the first group of picture data, at least picture data corresponding to a first picture of the moving pictures, and to decode, concerning the groups of picture data except for the first group of picture data, at least the picture data classified into the I-pictures; and

control the output unit to output, concerning the first group of picture data, at least the first picture of moving pictures, and to output, concerning the groups of picture data except for the first group of picture data, at least the pictures corresponding to the I pictures.

9. (Previously presented) The image playback method of claim 6, further comprising the steps of:

when the image apparatus is instructed to operate in a reverse playback different from the normal playback:

controlling the buffer unit to buffer, concerning a first group of picture data in the normal playback order, all of the picture data, and to buffer, concerning groups of

picture data except for the first group of picture data, part of the picture data including at least the picture data classified into the I-pictures;

controlling the decoder to decode, concerning the first group of picture data, at least picture data corresponding to a first picture of the moving pictures, and to decode, concerning the groups of picture data except for the first group of picture data, at least the picture data classified into the I-pictures; and

controlling the output unit to output, concerning the first group of picture data, at least the first picture of the moving pictures, and to output, concerning the groups of picture data except for the first groups of picture data, at least pictures corresponding to the I-pictures.

10. (Previously presented) The computer-readable storage medium of claim 7, wherein the process further comprises the steps of:

when the image apparatus is instructed to operate in a reverse playback different from the normal playback:

controlling the buffer unit to buffer, concerning a first group of picture data in the normal playback order, all of the picture data, and to buffer, concerning groups of picture data except for the first group of picture data, part of the picture data including at least the picture data classified into the I-pictures;

controlling the decoder to decode, concerning the first group of picture data, at least picture data corresponding to a first picture of the moving pictures, and to decode, concerning the groups of picture data except for the first group of picture data, at least the picture data classified into the I-pictures; and

controlling the output unit to output, concerning the first group of picture data, at least the first picture of the moving pictures, and to output, concerning the groups of picture data except for the first groups of picture data, at least pictures corresponding to the I-pictures.

11. (Previously presented) The image playback apparatus of claim 1, wherein the playback order includes a sequence of all I(Intra-coded)-picture(s), P(Predictive-coded)-picture(s), and B(Bidirectionally Predictive-coded)-picture(s).

12. (Previously presented) The image playback apparatus of claim 1, wherein the predetermined encoding method includes encoding a single I(Intra-coded)-picture for each group.

13. (Previously presented) The image playback apparatus of claim 1, wherein an amount of time used for displaying picture data located at the end is reduced by not buffering the picture data located at the end using the predetermined encoding method.

14. (Previously presented) The image playback method of claim 2, wherein the playback order includes a sequence of all I(Intra-coded)-picture(s), P(Predictive-coded)-picture(s), and B(Bidirectionally Predictive-coded)-picture(s).

15. (Previously presented) The image playback method of claim 2, wherein the predetermined encoding method includes encoding a single I(Intra-coded)-picture for each group.

16. (Previously presented) The image playback method of claim 2, wherein an amount of time used for displaying picture data located at the end is reduced by not buffering the picture data located at the end using the predetermined encoding method.

17. (Previously presented) The computer-readable storage medium of claim 3, wherein the playback order includes a sequence of all I(Intra-coded)-picture(s), P(Predictive-coded)-picture(s), and B(Bidirectionally Predictive-coded)-picture(s).

18. (Previously presented) The computer-readable storage medium of claim 3, wherein the predetermined encoding method includes encoding a single I(Intra-coded)-picture for each group.

19. (Previously presented) The computer-readable storage medium of claim 3, wherein an amount of time used for displaying picture data located at the end is reduced by not buffering the picture data located at the end using the predetermined encoding method.

20. (Previously presented) The image playback apparatus of claim 5, wherein the control unit notifies the decoder to operate in an I-picture decoding mode

concerning groups of picture data except for the last group of picture data, and to
operate in an I/P-picture decoding mode concerning the last group of picture data.